

Abstract of the Disclosure

A method evaluates an error-correcting code for a data block of a finite size. An error-correcting code is defined by a parity check matrix, wherein columns represent variable bits and rows represent parity bits. The parity check matrix is represented as a bipartite graph. A single node in the bipartite graph is iteratively renormalized until the number of nodes in the bipartite graph is less than a predetermine threshold. During the iterative renormalization, a particular variable node is selected as a target node, and a distance between the target node and every other node in the bipartite graph is measured. Then, if there is at least one leaf variable node, renormalize the leaf variable node farthest from the target node, otherwise, renormalize a leaf check node farthest from the target node, and otherwise renormalize a variable node farthest from the target node and having fewest directly connected check nodes. By evaluating many error-correcting codes according to the method, an optimal code according to selected criteria can be obtained.